

Physic nut, Jatropha curcas

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The physic nut, Jatropha curcas L. (other common names: Barbadosnut, purge nut, curcas bean), a native of tropical America, is frequently grown in tropical and subtropical areas throughout the world, including South Florida, as an ornamental and occasionally for medicinal purposes. It is unfortunately called by some people pistachio or cashew. The true pistachio (Pistacia vera L.) and cashew (Anacardium occidentale L.) are good, edible nuts of the family Anacardiaceae. The physic nut is in the family Euphorbiaceae and is unrelated to the true pistachio or cashew, but rather to the castor bean (Ricinus communis L.). Physic nuts have a pleasant taste similar to sweet almonds, giving no indication of their irritant properties, and tempting persons, especially children, to eat more.

The physic nut is typical of many members of Euphorbiaceae, having a caustic, milky sap and toxic seed. There apparently are variations in the toxicity of the seeds, some varieties considered toxic and others considered harmless. The toxic and harmless varieties can not be distinguished visually. Some people who have eaten the supposedly harmless seeds have developed mouth sores.

DESCRIPTION: Jatropha curcas (fig. 1) is an annual shrub or short-lived tree up to about 15 ft (5 m) tall. Stems thick, green, glabrous, mostly herbaceous or somewhat succulent, becoming woody at the base. Leaves alternate, long petioled, palmately veined, cordate to truncate at the base, about 6 in. (1.5 dm) wide, margin irregular or with 3-5 shallow lobes, points acute to obtuse. Flowers small, yellow, unisexual, in clusters in leaf axils, mostly hidden in foliage. Fruit an ovoid, 3-locular capsule, at first green and fleshy, becoming brownish or almost black and dry at maturity, containing up to 3 black seeds about 3/4 in. (20 mm) long.

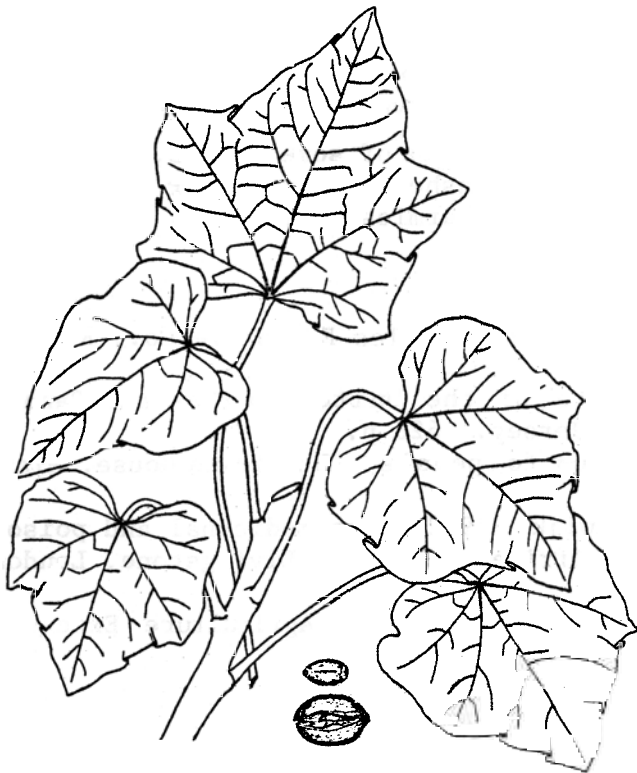


Fig. 1. Jatropha curcas (after West, 1960)

TOXICITY: The seeds contain 25-53% of a yellow fixed oil known variously as Hell oil, Pinhoen oil, Oleum infernale, and Oleum ricini majoris. This oil is a more potent purgative than castor oil, but less than croton oil. The purgative dose is 0.3-0.6 ml. The seeds also contain a phytotoxin, curcin, which is similar to, but not identical with, ricin from castor bean. Roasting is reported by some to detoxify the nuts, although a number of people have been

poisoned to varying degrees from eating the roasted nuts. In addition to the above products, the seeds also contain 2 phytosterols, a phytosterolin, and some resinous matter which produces nausea, purging, and griping. In some instances consumption of as few as 3 seeds has produced toxic symptoms. In others consumption of as many as 50 seeds produced relatively mild symptoms. Human deaths from poisoning by this plant apparently have not been reported, though animal deaths have.

Symptoms and lesions are similar to those in poisoning by castor bean and result primarily from severe gastroenteritis. A burning sensation in the throat, followed by vomiting, diarrhea, abdominal pain, and associated symptoms have been reported. Depression and collapse may occur, especially in children. The latex of all parts of the plant is acrid, irritating, and toxic. The leaf is a drastic purgative. Some varieties also possess stinging hairs.

USES: Whole seeds or the expressed oil have been used medicinally as a purgative. These are rarely used now, being replaced by castor oil, a somewhat milder and much safer material. Certain African tribes have used the seeds as an abortifacient. The oil has been used for illuminating purposes, soap making, candle making, and adulteration of olive oil. It is used as a lubricant because of its low acidity. The nuts strung on grass and dried are used for illumination. The oil has been used as a skin rub, and the seed used as an anthelmintic and skin remedy.

Other parts of the plant are also used. The leaf juice is used in India and Africa for wound dressing and the latex as a hemostatic. The pounded leaf is used as a fly repellent from horses' eyes. A leaf decoction is diuretic. The latex is applied topically to wasp and bee stings. The root bark is used as an irritant for rheumatism and the seed for dropsy, gout, paralysis, and skin disease. The bark is used as a fish poison in the Philippines. The plant has been used to make an arrow poison and as an ingredient in preparing poison maize as a bait for guinea-fowl. Nuts ground and mixed with palm oil serve as rat poison.

Regardless of the reported edibility of the seeds of some plants, their good taste, the misapplied common names, pistachio or cashew, or any other factors, it is dangerous to eat seeds of even the supposedly harmless varieties.

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